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09/881,628	06/13/2001	Enrique Musoll	P3825	8580
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HUFFMAN LAW GROUP, P.C. 1832 N. CASCADE AVE. COLORADO SPRINGS, CO 80907-7449			MEW, KEVIN D	
			ART UNIT	PAPER NUMBER
			2616	

DATE MAILED: 06/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/881,628

Applicant(s)

MUSOLL ET AL.

Examiner

Kevin Mew

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/30/06
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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Final Action

Response to Amendment

1. Applicant's Remarks/Arguments filed on 3/15/2006 regarding claims 1-39 have been considered. Claims 1-39 are currently pending.
2. Acknowledgement is made of the amended claims 1, 14-17, 26, 33, and 38-39 regarding the claim objections set forth in the previous Office Action. The corrections are acceptable and the claim objections on 1, 14-17, 26, 33, and 38-39 have been withdrawn.
3. Acknowledgement is made of the amended claims 1, 13, 26 and 33 regarding the 35 U.S.C. 112, second paragraph rejection set forth in the previous office action. The corrections are acceptable and the 35 U.S.C. 112, second paragraph rejection on claims 1, 13, 26 and 33 have been withdrawn.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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4. Claims 1-7, 9-12, 13-19, 21-25, 26-36, 38-39 are rejected under 35 U.S.C. 102(e) as being anticipated by Goldszmidt et al. (USP 6,195,680).

Regarding claim 1, Goldszmidt discloses a context-selection mechanism for selecting a context (**selecting a streaming server based on size, capacity, location/affinity, network connectivity and utilization rate**, see col. 4, lines 26-67, col. 5, lines 1-3, 55-64 and Fig. 1a) from a pool of contexts (**from a pool of clusters 1.5 and 1.6, Fig. 1a**) for processing a data packet (**for processing packet information via the Internet**, see col. 5, lines 23-49) comprising:

an interface (**client agent, Fig. 1a**) for communicating with a multi-streaming processor (**for communicating with server architecture**, see elements 1,7, 1.8, Fig. 1a) said multi-streaming processor (**server architecture**, see element 1.7, Fig. 1a) hosting the pool of contexts (**the pool of clusters of streaming servers**, see element 1.2, 1.3, 1.5, 1.6, Fig. 1a);

circuitry (**control server 2.1, Fig. 1a**) for computing input data into a result value according to logic rule (**for computing number of connection streams to each streaming server**, see col. 8, lines 44-54) and for selecting a context based on the computed value (**for selecting a server based on the computed number of connection streams to each streaming server**, see col. 8, lines 44-54); and

a loading mechanism for preloading the packet information into the selected context (**affinity tables are maintained in the TCP router/control server**, see col. 6, lines 32-60) for subsequent processing (**to maintain affinity records to indicate which node is client was routed to**, see col. 6, lines 32-60);

characterized in that the computation of the input data functions (**the computation of the number of streaming connections to each streaming server**, see col. 8, lines 44-54) to enable identification and selection of a best context for processing a data packet according to the logic rule at the instant time (**enables the identification and selection of a streaming server to be assigned to respond to client agent requests**, see col. 8, lines 44-54) such that a multitude of context selections made over a period of time (**based on the number of connection streams to each streaming server**, see col. 8, lines 44-54) facilitates balancing of load pressure on functional units (**streaming servers**) housed within the multi-streaming processor and required for packet processing (**facilitates load balancing on the streaming servers housed within the server architecture required for streaming multimedia packets to clients**, see col. col. 8, lines 44-54).

Regarding claim 2, Goldszmidt discloses the context-selection mechanism of claim 1 integrated to a data packet router (**selection of a streaming server integrated to the control server 1.1, which is a TCP router**, see col. 4, lines 54-67, col. 5, lines 1-3) operating in a data-packet-network (**operating in the Internet**, see col. 5, lines 22-31).

Regarding claim 3, Goldszmidt discloses the context-selection mechanism of claim 2 wherein the data-packet- network is the Internet network (**the Internet**, see col. 5, lines 22-31).

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Regarding claim 4, Goldszmidt discloses the context-selection mechanism of claim 1 wherein the pool of contexts (**the pool of clusters of streaming servers**, Fig. 1a) is divided into separate clusters (**separates clusters 1.5, 1.6**, Fig. 1a) in the processing unit (**server architecture**, see element 1.7, Fig. 1a), each cluster containing some of the functional units used in packet processing (**each cluster contains streaming servers used in streaming packets**, col. 4, lines 26-58 and Fig. 1a).

Regarding claim 5, Goldszmidt discloses the context-selection mechanism of claim 1 wherein the input data into the computation circuitry includes availability information of individual ones of the pool of contexts at the time of computation (**real-time information of the unavailability of a streaming server based on determining that the received bit rate**, see col. 10, lines 1-18).

Regarding claim 6, Goldszmidt discloses the context-selection mechanism of claim 5 wherein the input data into the computation circuitry further includes real time information of any processing streams stalled in un-available ones of the pool of contexts (**real-time information of the failure of a streaming server based on determining that the received bit rate**, see col. 10, lines 1-18) and the reason for the stall (**when the bit rate is below a threshold**, see col. 10, lines 1-18).

Regarding claim 7, Goldszmidt discloses the context-selection mechanism of claim 5 wherein the input data into the computation circuitry further includes statistical

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data about previous processing time periods required to process similar data packets
(**delivery rate is based using server time stamps**, see col. 10, lines 49-63).

Regarding claim 9, Goldszmidt discloses the context-selection mechanism of claim 1 wherein the input data is sourced from the multi-streaming processor (**control server 1.1 of the server architecture 1.7 monitors the number of connection streams to a streaming server**, see col. 8, lines 44-54).

Regarding claim 10, Goldszmidt discloses the context-selection mechanism of claim 1 wherein the input data is sourced from a third party (**a client detects load imbalances**, see col. 3, lines 6-11).

Regarding claim 11, Goldszmidt discloses the context-selection mechanism of claim 4 wherein the clusters are numbered (**clusters are numbered**, see col. 4, lines 26-40 and Fig. 1a) and the functional units are distributed symmetrically therein (**streaming servers are distributed symmetrically as even numbers in one cluster**, see col. 4, lines 26-40 and Fig. 1a).

Regarding claim 12, Goldszmidt discloses the context-selection mechanism of claim 4 wherein the clusters are numbered (**clusters are numbered**, see col. 4, lines 26-40 and Fig. 1a) and the functional units are distributed asymmetrically therein (**servers are distributed asymmetrically as even numbers in one cluster and odd numbers in another cluster**, see col. 4, lines 26-40).

Regarding claim 13, Goldszmidt discloses a system for load balancing pressure on functional units (**load balancing for streaming servers in each cluster**) within a multi-streaming processor (**server architecture**, Fig. 1a) during the processing of multiple data packets (**for processing packet information via the Internet**, see col. 5, lines 23-49) comprising:

a context-selection mechanism having a communication interface (**client agent**, Fig. 1a);

circuitry for computing input data (**control server 2.1**, Fig. 1a) according to a logic rule (**for computing number of connection streams to each streaming server**, see col. 8, lines 44-54) and a mechanism for preloading packet information into available ones of a pool of contexts (**affinity tables are maintained in the TCP router/control server**, see col. 6, lines 32-60);

a multi-streaming processor core (**server architecture**, see element 1.7, Fig. 1a) responsible for processing the data packets (**for processing packet information via the Internet**, see col. 5, lines 23-49), the processor core hosting the functional units (**server architecture housing a plurality of streaming servers**, see element 1.7, Fig. 1a) and the context pool(**the pool of clusters of streaming servers**, see element 1.2, 1.3, 1.5, 1.6, Fig. 1a); and

a set of instructions comprising the one or more logic rules governing context selection (**for computing number of connection streams to each streaming server**, see col. 8, lines 44-54), wherein pressure upon the functional units within the processor core is balanced by selecting individual contexts based at least in part on the

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value (**load balancing on the streaming servers housed within the server architecture required for streaming multimedia packets to clients based on the number of connection streams to each streaming server**, see col. 8, lines 44-54).

Regarding claim 14, Goldszmidt discloses the context-selection mechanism of claim 13 integrated to a data packet router (**selection of a streaming server integrated to the control server 1.1, which is a TCP router**, see col. 4, lines 54-67, col. 5, lines 1-3) operating in a data-packet-network (**operating in the Internet**, see col. 5, lines 22-31).

Regarding claim 15, Goldszmidt discloses the context-selection mechanism of claim 14 wherein the data-packet- network is the Internet network (**the Internet**, see col. 5, lines 22-31).

Regarding claim 16, Goldszmidt discloses the context-selection mechanism of claim 13 wherein the pool of contexts (**the pool of clusters of streaming servers**, Fig. 1a) is divided into separate clusters (**separates clusters 1.5, 1.6**, Fig. 1a) in the processing core (**server architecture**, see element 1.7, Fig. 1a), each cluster containing some of the functional units used in packet processing (**each cluster contains streaming servers used in streaming packets**, col. 4, lines 26-58 and Fig. 1a).

Regarding claim 17, Goldszmidt discloses the context-selection mechanism of claim 13 wherein the input data into the computation circuitry includes availability

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information of individual ones of the pool of contexts at the time of computation (**real-time information of the unavailability of a streaming server based on determining that the received bit rate**, see col. 10, lines 1-18).

Regarding claim 18, Goldszmidt discloses the context-selection mechanism of claim 13 wherein the input data into the computation circuitry further includes real time information of any processing streams stalled in un-available ones of the pool of contexts (**real-time information of the failure of a streaming server based on determining that the received bit rate**, see col. 10, lines 1-18) and the reason for the stall (**when the bit rate is below a threshold**, see col. 10, lines 1-18).

Regarding claim 19, Goldszmidt discloses the context-selection mechanism of claim 13 wherein the input data into the computation circuitry further includes statistical data about previous processing time periods required to process similar data packets (**delivery rate is based using server time stamps**, see col. 10, lines 49-63).

Regarding claim 21, Goldszmidt discloses the context-selection mechanism of claim 13 wherein the input data is sourced from the multi-streaming processor (**control server 1.1 of the server architecture 1.7 monitors the number of connection streams to a streaming server**, see col. 8, lines 44-54) and provided in a software table (**affinity tables**, col. 6, lines 48-60).

Regarding claim 22, Goldszmidt discloses the context-selection mechanism of claim 13 wherein the input data is sourced from a third party (**a client detects load imbalances**, see col. 3, lines 6-11).

Regarding claim 23, Goldszmidt discloses the context-selection mechanism of claim 16 wherein the clusters are numbered (**clusters are numbered**, see col. 4, lines 26-40 and Fig. 1a) and the functional units are distributed symmetrically therein (**streaming servers are distributed symmetrically as even numbers in one cluster**, see col. 4, lines 26-40 and Fig. 1a).

Regarding claim 24, Goldszmidt discloses the context-selection mechanism of claim 16 wherein the clusters are numbered (**clusters are numbered**, see col. 4, lines 26-40 and Fig. 1a) and the functional units are distributed asymmetrically therein (**servers are distributed asymmetrically as even numbers in one cluster and odd numbers in another cluster**, see col. 4, lines 26-40).

Regarding claim 25, Goldszmidt discloses the system of claim 13 wherein the set of instructions comprising the logic rule is programmable (see col. 9, lines 23-34).

Regarding claim 26, Goldszmidt discloses a method for load balancing pressure on functional units (**streaming servers**, elements 1.2, 1.3, Fig. 1a) contained within a multi-streaming processor core (**server architecture**, see Fig. 1a) during processing of

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multiple data packets (**for processing packet information via the Internet**, see col. 5, lines 23-49) comprising steps of:

(a) arranging the functional units (**streaming servers**, Fig. 1a) into more than one separate cluster (**clusters**, see elements 1.5, 1.6, Fig. 1a) on the core of the processor (**on the core of the server architecture**, element 1.7 Fig. 1a), each cluster (**each cluster**, Fig. 1a) containing an equal number of contexts (**equal number of odd and even streaming servers**, Fig. 1a) that may write to the functional units (**streaming servers**) within the hosting cluster (**streaming servers within each cluster**, see Fig. 1a);

(b) receiving a data packet for processing (**for processing packet information via the Internet**, see col. 5, lines 23-49);

(c) receiving as input for computation, data about the instant availability status of individual contexts within each cluster (**real-time information of the unavailability of a streaming server within each cluster based on determining that the received bit rate**, see col. 10, lines 1-18);

(d) receiving as input for computation, data about stream status of streams occupying any contexts within each cluster (**receiving current number of connection streams to each streaming server**, see col. 5, lines 44-54); and

(e) computing the data received as input to produce a value (**the computation of the number of streaming connections to each streaming server**, see col. 8, lines 44-54), the value identifying and initiating selection of a context for processing the data packet (**the number of streaming connections enables the identification and selection of a streaming server to be assigned to respond to client agent requests**, see col. 8, lines 44-54) and balancing the load of the functional units within each cluster (**load**

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balancing on the streaming servers housed within the server architecture required for streaming multimedia packets to clients, see col. 8, lines 44-54); and

(f) repeating steps (b) through (e) for each of the multiple data packets for processing (**continuous multimedia stream processing**, see col. 3, lines 12-26).

Regarding claim 27, Goldszmidt discloses the method of claim 26 integrated to a data packet router (**selection of a streaming server integrated to the control server 1.1, which is a TCP router**, see col. 4, lines 54-67, col. 5, lines 1-3) operating in a data-packet-network (**operating in the Internet**, see col. 5, lines 22-31).

Regarding claim 28, Goldszmidt discloses the method of claim 27 wherein the data-packet- network is the Internet network (**the Internet**, see col. 5, lines 22-31).

Regarding claim 29, Goldszmidt discloses the method of claim 26 wherein in step (a) the functional units are provided within each cluster in a symmetrical fashion (**streaming servers are distributed symmetrically as even numbers in one cluster**, see col. 4, lines 26-40 and Fig. 1a).

Regarding claim 30, Goldszmidt discloses the method of claim 26 wherein in step (a) the functional units are provided within each cluster in an asymmetrical fashion (**streaming servers are distributed asymmetrically as odd numbers in one cluster**, see col. 4, lines 26-40 and Fig. 1a).

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Regarding claim 31, Goldszmidt discloses the method of claim 26 wherein in step (b) the packet is received at a data port of a data router and requires automatic activation **(packet is received at the address of the control server, see col. 4, lines 65-67, col. 5, lines 1-3).**

Regarding claim 32, Goldszmidt discloses the method of claim 26 wherein in step (b) the packet is held by the processor and requires a context for processing **(automatically switching clients among multiple streaming servers, see col. 9, lines 66-67, col.10, lines 1-3).**

Regarding claim 33, Goldszmidt discloses the method of claim 26 wherein in step (c) availability status comprises an indication of which one of two components owns each context **(indicating whether even numbered ports primary streaming servers or odd numbered ports alternate streaming servers takes the responsibility to serve client requests, see col. 9, lines 7-22).**

Regarding claim 34, Goldszmidt discloses the method of claim 33 wherein in step (c) one of the components is the processor **(streaming server 3.2)** and other component is a packet management unit **(alternate streaming server 3.7, Fig. 3).**

Regarding claim 35, Goldszmidt discloses the method of claim 26 wherein in step (d) the data about stream status includes whether or not streams are stalled within any of the contexts **(real-time information of the failure of a streaming server based on**

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determining that the received bit rate, see col. 10, lines 1-18) and the reason for the stall (**when the bit rate is below a threshold**, see col. 10, lines 1-18).

Regarding claim 36, Goldszmidt discloses the method of claim 26 wherein in step (d) the data about stream status includes time parameters of how long each stream will take to process data packets associated with their contexts (**delivery rate is based using server time stamps**, see col. 10, lines 49-63).

Regarding claim 38, Goldszmidt discloses the method of claim 26 wherein in steps (c) through (d) are practiced according to a set of rules of logic (see col. 10, lines 49-63).

Regarding claim 39, Goldszmidt discloses the method of claim 39 wherein the rule of logic is programmable (see col. 9, lines 23-34).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 8, 20, 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goldszmidt et al. in view of Zisapel et al. (USP 6,249,801)

Regarding claim 8, Goldszmidt discloses all the aspects of the claimed invention set forth in the rejection of claim 5 above, except fails to explicitly show the context-selection mechanism of claim 5 wherein the input data into the computation circuitry further includes statistical data about the distribution of instruction types associated with individual ones of previously processed and similar data packets.

However, Zisapel discloses the request type from client can be DNS request or HTTP request (see col. 7, lines 52-61).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the load balancing method and system of Goldszmidt with the teaching of Zisapel in rerouting requests based on the type of request made by client such that the weighted value to determine which load balancer will be the best proximity network to respond to client's request is based on the distribution of what request type to be instructed by client. The motivation to do so is to enable redirecting the request to the appropriate location according to the type of request made by client during the determination of the best proximity network to client.

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Regarding claim 20, Goldszmidt discloses all the aspects of the claimed invention set forth in the rejection of claim 13 above, except fails to explicitly show the system of claim 13 wherein the input data into the computation circuitry further includes statistical data about the distribution of instruction types associated with individual ones of previously processed and similar data packets. However, Zisapel discloses the request type from client can be DNS request or HTTP request (see col. 7, lines 52-61).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the load balancing method and system of Goldszmidt with the teaching of Zisapel in rerouting requests based on the type of request made by client such that the weighted value to determine which load balancer will be the best proximity network to respond to client's request is based on the distribution of what request type to be instructed by client. The motivation to do so is to enable redirecting the request to the appropriate location according to the type of request made by client during the determination of the best proximity network to client.

Regarding claim 37, Goldszmidt discloses all the aspects of the claimed invention set forth in the rejection of claim 26 above, except fails to explicitly show the method of claim 26 wherein in step (d) the data about stream status includes distribution parameters of instruction types that each stream has executed to process its data packet. However, Zisapel discloses the request type from client can be DNS request or HTTP request (see col. 7, lines 52-61). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the load balancing method and system of Goldszmidt with the teaching of Zisapel in rerouting requests based on the type of

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request made by client such that the weighted value to determine which load balancer will be the best proximity network to respond to client's request is based on the distribution of what request type to be instructed by client. The motivation to do so is to enable redirecting the request to the appropriate location according to the type of request made by client during the determination of the best proximity network to client.

Response to Arguments

6. Applicant's arguments with respect to claims 1-39 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Mew whose telephone number is 571-272-3141.

The examiner can normally be reached on 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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